DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 171, 172 and 173

[Docket No. HM-139H; Amdt. Nos. 172-126, 173-230]

RIN 2137-AB98

Air Bag Inflators and Air Bag Modules for Passive Restraint Systems; Conversion of Individual Exemptions into Regulations of General Applicability

AGENCY: Research and Special Programs Administration (RSPA), DOT.

ACTION: Final rule.

SUMMARY: RSPA is amending the Hazardous Materials Regulations (HMR; 49 CFR parts 171–180) governing the transportation of air bag inflators and air bag modules used in certain passive restraint systems. This action provides for transportation of these devices under provisions contained in the HMR rather than under the exemptions program. In addition, it eliminates a requirement for the separate classification and approval of air bag modules containing approved inflators, and provides exceptions from the HMR for air bag modules installed in steering wheel columns and motor vehicles. This action is based, in part, on a petition for rulemaking (P-1054) filed by the Motor Vehicle Manufacturers Association of the United States, Inc. (MVMA). The intended effect of this action is to simplify and incorporate the terms and conditions of exemptions, which have proven to be effective and safe, into rules of general applicability, and to reduce costs, paperwork and time delays to manufacturers and shippers of these devices.

EFFECTIVE DATE: May 6, 1992. However, compliance with the requirements as adopted herein is authorized immediately.

FOR FURTHER INFORMATION CONTACT: Dr. Charles Ke, (202) 366-4545, Office of Hazardous Materials Technology, or Hattie L. Mitchell, (202) 366-4488, Office of Hazardous Materials Standards, Research and Special Programs Administration, U.S. Department of Transportation, Washington, DC 20590-0001.

SUPPLEMENTARY INFORMATION:

I. Background

The major components of an air bag inflator are an igniter, a booster material and a gas generant. The booster material and gas generant are typically

class B propellant explosives. The igniter is typically a class C explosive. An air bag module is a complete assembly, consisting of an inflatable air bag and an inflator. This assembly is part of a passive restraint system mounted in the steering wheel or glove compartment area of an automobile and is activated when the vehicle is subjected to a predetermined level of impact. When offered for transportation in commerce, the shipment may consist of the inflator, the module, the module assembly installed in a steering wheel column, or installed in an automobile or other lightweight motor vehicle.

Under the HMR, an air bag inflator or an air bag module is described and classed as an explosive power device, class C or B, depending on its size. Except as specifically provided in § 173.56 (formerly § 173.86), the regulations require that all new explosives be examined and assigned a recommended shipping description and hazard class by the Department of the Interior's Bureau of Mines (BOM) or the Association of American Railroads' Bureau of Explosives (BOE), before being classed and approved for transportation by RSPA's Associate Administrator for Hazardous Materials Safety (OHMS) (previously titled Director, Office of Hazardous Materials Transportation). A "new explosive," as defined in § 173.56(a)(2), means an explosive compound, mixture or device, produced by a person who (1) has not previously produced that explosive; or (2) has previously produced that explosive but has made a change in the formulation, design, or process so as to alter any of the properties of the explosives.

Under the terms of exemptions, air bag inflators and air bag modules have been classed as flammable solids for transportation in the United States when the completed packages have been examined for that hazard class by the BOE or BOM and approved by OHMS. The exemptions providing for the transportation of these devices as flammable solids are based on extensive testing performed on the air bag inflators and modules (i.e., bonfire test, initiation of the devices, etc.) RSPA has issued several exemptions authorizing the transportation of air bag inflators and modules as flammable solids. These exemptions are DOT-E 8214, E 8236, E 8273, E 9066, and E 10086. Another exemption, DOT-E 10103, authorizes the transportation of certain air bag modules installed in automobile assemblies without their being subject to the other requirements of the HMR. No incidents have been reported to RSPA involving transportation of these devices under those exemptions.

Based on a petition for rulemaking from the Motor Vehicle Manufacturers Association (MVMA) (P-1054), RSPA published a notice of proposed rulemaking (NPRM) in the Federal Register under Docket No. HM-139H, Notice No. 90-3 (February 26, 1990; 55 FR 6730) to provide for transportation, within the United States, of air bag inflators and air bag modules as flammable solids, under provisions contained in the HMR rather than under the exemption program. As stated in the NPRM, one reason for MVMA's position that these devices should be transported under regulations of general applicability was the automotive industry's projection for equipment of as many as 3 to 4 million U.S.-manufactured cars with air bags in 1990—a substantial increase from the approximately 400,000 air bags installed in 1989 model cars. Beginning in the 1990 model year, all passenger cars sold in the United States are required under regulations issued by DOT's National Highway Traffic Safety Administration (NHTSA) to be equipped with automatic restraints, consisting of either manual safety belts combined with an air bag or automatic motorized safety belts. NHTSA has extended requirements for front seat automatic crash protection to vans, light trucks, utility vehicles and small buses on a phased-in basis for vehicles manufactured after September 1, 1994. For details of NHTSA regulations, refer to a final rule published in the Federal Register (56 FR 12472) on March 26, 1991, under Docket No. 74-14, and to requirements found in 49 CFR 571.208.

On December 21, 1990, RSPA published a final rule in the Federal Register (55 FR 52402) under Docket No. HM-181. The final rule, which became effective on October 1, 1991, made significant changes to the HMR with respect to the format of the HMR and the hazard communication, classification and packaging requirements. The discussions and the amendments contained in this final rule are aligned with the changes adopted under HM-181.

II. Discussion of Comments to NPRM

RSPA received 12 comments on the proposals contained in the NPRM. These comments were received from trade associations, manufacturers of air bag modules and inflators, shippers, and State and local agencies. Most commenters expressed support for the proposal contained in the NPRM, but several raised concerns about certain provisions in the proposal.

RSPA proposed to retain the requirement that air bag inflators or air bag modules be examined by the BOE or BOM and be classed and approved for transportation by the OHMS. However, an exemption would no longer be required to transport these devices as flammable solids, provided the complete package has been examined by the BOM or the BOE, and classed and approved for transportation by OHMS. Several commenters stated that other than eliminating the need to renew an exemption every 18 or 24 months, the proposal, if adopted, would not significantly simplify the transportation or applicable paperwork burden. In addition, commenters stated that because the explosive component is contained in the inflator, the EX number and the competent authority letter should apply to the inflator, not the module.

Because of numerous variations in sizes and shapes of modules, RSPA, in its exemption process, has encountered difficulties in readily tracing a particular explosive compound, mixture or device to the detailed description contained in the manufacturer's application. Therefore, for identification purposes, RSPA has assigned different EX numbers to the inflator and the module. Upon further review, however, RSPA agrees with the commenters that if an inflator has been examined and approved for transportation, issuance of a separate approval for a module containing an approved inflator is unnecessary. Therefore, this final rule requires that only the inflator be submitted for examination and approval. However, to maintain the traceability of an approved inflator, RSPA is requiring that the product code used to classify the inflator or the EX number assigned by OHMS to the inflator, be shown on the shipping papers in association with the shipping description.

As provided in this final rule, procedures for obtaining an approval of an inflator are as follows:

1. Under the explosive approval provisions in § 173.56, a manufacturer must have the inflator examined by the BOE or BOM. In the same or a different application, an applicant may request classification of an inflator as Division 4.1 (flammable solid), as outlined in § 173.166(b). To facilitate variations in the design, without the need for a new examination, the application data may be based on the maximum parameters of each particular design type for which approval is sought. These maximum parameters must be considered during

the laboratory examination and must be noted in the laboratory report.

2. The manufacturer must then submit a written application for approval of the device to OHMS. An application for the inflator must contain a detailed description of the device, including size, design, chemical composition (including a list of formulas), a master drawing showing location of all components, BOE or BOM test results, and copies of all other relevant background data for processing the approval request. If the application data is found to be satisfactory, the manufacturer will then be issued an EX number approval for the inflator. The approval will be based on the maximum parameters reviewed by the BOE or BOM for which approval was sought. These provisions will allow a manufacturer to make minor changes in the inflator, for example, changes in the weights of the components within the prescribed parameters or changes in hardware not affecting the safety of the units. Any change in formula or packaging not within the parameters of the approved design is subject to the examination and approval provisions in § 173.56.

The new explosive classification approvals issued by RSPA under § 173.56 combine both an EX approval and a competent authority certificate for explosive classification under the international regulations. Therefore, these new approvals satisfy requirements under the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions), the International Maritime Organization's International Maritime Dangerous Goods (IMDG) Code and the HMR. RSPA believes these procedures will significantly reduce processing costs and time delays.

The Air Line Pilots Association (ALPA) expressed several concerns about the proposal. ALPA stated that the safety of an aircraft carrying these devices is less likely to be compromised when the devices are prepared for transportation under the terms of an exemption than when they are prepared in accordance with packaging requirements contained in the HMR. RSPA does not agree. Many air bag inflators and modules are being transported as explosives in international commerce by aircraft under the ICAO Technical Instructions. RSPA believes there is no significant difference in the risk posed by packages containing air bag inflators and modules that are transported under the ICAO Technical Instructions, and those packages transported under exemption. As with other hazardous materials, RSPA will continue to monitor incidents involving the transportation of these devices to ensure that they are being transported in a manner that does not endanger public safety.

Most air bag inflators and modules are described and classed as "Articles, pyrotechnic for technical purposes" (UN0430, 1.3G; UN0431, 1.4G; and UN0432, 1.4S) by competent authorities of other countries, based on the amount of pyrotechnic material contained in the device and the design of the device. RSPA, as the competent authority of the United States, has issued competent authority approvals for air bag inflators and modules as "Cartridges, power device, 1.4S." Several commenters questioned the disparities between domestic and international procedures. RSPA believes that, in spite of the differences in assignment, these devices actually have similar designs and composition and, consequently, pose similar levels of risk in transportation. To reduce these disparities and to harmonize descriptions, RSPA will also use the description "Articles, pyrotechnic." However, all approvals issued as "Cartridges, power device" will remain valid.

ALPA also expressed concern over the absence of a POISON label on packages containing air bag inflators that use sodium azide as a gas generant. In addition, ALPA inquired why RSPA did not list or specifically include in the NPRM the ignition and boostering materials or enhancers contained in these devices, and how RSPA plans to address the intrinsic risks associated with those unnamed substances.

Sodium azide is a solid material that is toxic by ingestion. The sodium azide contained in air bags is in pressed disc form, inside a sealed metal housing. RSPA believes the possibility of the metal housing being opened accidentally is minimal. When an air bag is initiated in a vehicular impact, the sodium azide is converted to nitrogen gas which is non-toxic. These devices do not contain detonating explosives. Tests performed on these devices have demonstrated that, should activation occur during transportation, the likelihood of an injury due to deflagration outside the package is very low. There is, however, a slight possibility of surface burns because of the small amount of pyrotechnic contained in these devices. Therefore, RSPA authorizes these devices to be transported domestically as flammable solids. In the final rule, RSPA has provided for these devices in Packing Group III. Procedures for approval of the devices as Division 4.1, that is, a flammable solid, are contained in § 173.166(b).

The NPRM did not include a listing of authorized packagings for air bag inflators and modules shipped as flammable solids. Several commenters stated that the proposal should be amended to specify in the regulations all authorized packagings. RSPA agrees with the commenters and has included a list of the authorized packagings in the packaging provisions in § 173.166. These prescribed packagings are based on performance-oriented standards consistent with requirements adopted under HM-181.

In the NPRM, the proposed packaging provisions for air bag inflators and modules classed as flammable solids contained a note to alert shippers that air bag inflators and modules are regulated as explosives, and not flammable solids, when transported by aircraft under the ICAO Technical Instructions and by vessel under the IMDG Code. That note has not been adopted in this final rule. Instead, column 1 of the Hazardous Materials Table, in § 172.101 (the § 172.101 Table) shows the letter "D" for the entry "Air bag inflators or Air bag modules," 4.1. The letter "D" identifies this proper shipping name is appropriate for describing these devices in domestic transportation but may not be appropriate for international transportation.

Mercedes-Benz of North America, Inc. (MBNA) stated that RSPA's use of the nomenclature "passive restraints" was in error. The commenter stated that air bags are "supplementary restraints" which must be used with safety belts and that the term "passive restraints" may imply that an air bag is a stand-alone restraint. MBNA submitted copies of excerpts from owner's manuals of other automobile manufacturers to show that the terminology "supplemental restraints" is used industry-wide.

RSPA uses the description "for passive restraint system" in exemptions to describe the purpose of these devices and, therefore, used it in the proposal. Because the description "supplemental restraint system" appears to be accepted industry terminology, RSPA has provided for the shipping description "for supplemental restraint" systems in the § 172.101 Table.

III. Section-by-Section Review

Section 171.8

The table in paragraph (b)(2) is amended by adding, in column 3 of the

entry for OMB control number 2137–0557, the section citation "173.166".

Section 172.101

The § 172.101 table is amended by adding an entry for "Air bag inflators or Air bag modules for supplemental restraint systems" with the hazard class "4.1" and the identification number "NA1325". This shipping name and corresponding hazard class is authorized for domestic shipments as denoted by the letter "D" in column 1.

This entry also references "Articles, pyrotechnic for technical purposes" (UN0430, UN0431, and UN0432). Use of this latter description and the associated explosive hazard classes is authorized for both domestic and international shipments. Inflators and modules being imported into the United States must be approved by OHMS in accordance with § 173.56(g) based on the approval of the competent authority of the country of origin.

The Air Transport Association of America requested a clarification on whether the net weight limitation applies only to the hazardous materials present in devices or to the entire assemblies. When transported by aircraft, the net quantity limitation applies to the weight of all assemblies contained within the package, that is the total weight of the hazardous materials and the hardware, to include the air bag when applicable. When shipped as Division 4.1, packaging group III, a maximum net quantity in one package of 25 kilograms (50 pounds) is authorized for transport by passenger aircraft, and 100 kilograms (220 pounds) is authorized for transport by cargo aircraft.

Section 173.166. (Proposed as § 173.199)

This section contains applicable packaging requirements for air bag inflators when classed as Division 4.1. Paragraph (b) contains procedures for air bag inflators to be classed as Division 4.1 when the device has been examined by the BOE or BOM and approved for that class by OHMS. Paragraph (c) requires that the product code used to classify the inflator or the EX number assigned to the inflator by OHMS must be noted on the shipping paper accompanying the shipment.

IV. Administrative Notices

A. Executive Order 12291 and DOT Regulatory Policies and Procedures

This final rule has been reviewed under the criteria specified in § 1(b) of Executive Order 12291 and (1) is determined not to be "major" under Executive Order 12291; (2) is not "significant" under DOT Regulatory Policies and Procedures (44 FR 11034); (3) will not affect not-for-profit enterprises, or small governmental jurisdictions; and (4) does not require an environmental impact statement under the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*). A regulatory evaluation is available for review in the docket.

B. Executive Order 12612

This final rule has been reviewed in accordance with Executive Order 12612 ("Federalism"). It has no substantial direct effect on the States, on the current Federal-State relationship, or on the current distribution of power and responsibilities among levels of government. Thus, this final rule contains no policies that have Federalism implications, as defined in Executive Order 12612, and no Federalism Assessment is required.

c. Regulatory Flexibility Act

The provisions of this final rule impact shippers and manufacturers of air bag inflators and modules and will have the net result of reducing costs to persons affected by this final rule. Based on available information, this rule will not have a significant economic impact on a substantial number of small entities under criteria of the Regulatory Flexibility Act.

D. Paperwork Reduction Act

Information collection requirements contained in current § 173.56 pertaining to new explosives have been approved by the Office of Management and Budget under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3504(h)) and assigned control number, OMB No. 2137–0557. The information collection contained in § 173.166(b) pertaining to classification of air bag inflators and modules as flammable solids is also approved under OMB No. 2137–0557 (previously approved under OMB No. 2137–0551).

List of Subjects

49 CFR Part 171

Exports, Hazardous materials transportation, Hazardous waste, Imports, Incorporation by reference, Reporting and recordkeeping requirements.

49 CFR Part 172

Hazardous materials transportation, Hazardous waste, Labeling, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 173

Hazardous materials transportation, Packaging and containers, Radioactive materials, Reporting and recordkeeping requirements, Uranium.

In consideration of the foregoing, 49 CFR parts 171, 172 and 173, are amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

1. The authority citation for part 171 continues to read as follows:

Authority: 49 App. U.S.C. 1802, 1803, 1804, 1805, 1808, 1818; 49 CFR part 1.

§ 171.8 [Amended]

2. In § 171.8, in paragraph (b)(2), the entry in the table for Current OMB control No. "2137–0557" is amended by adding in numerical order, under column 3, the section citation "173.166".

PART 172—HAZARDOUS MATERIALS TABLES, SPECIAL PROVISIONS, HAZARDOUS MATERIALS COMMUNICATIONS REQUIREMENTS AND EMERGENCY RESPONSE INFORMATION REQUIREMENTS

2a. The authority citation for part 172 continues to read as follows:

Authority: 49 App. U.S.C. 1803, 1804, 1805, 1808; 49 CFR part 1, unless otherwise noted.

§ 172.101 [Amended]

2b. In § 172.101, the Hazardous Materials Table is amended by adding entries, in alphabetical sequence, to read as follows:

§ 172.101 HAZARDOUS MATERIALS TABLE

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identification numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§ 173.***)			(9) Quantity limitations		(10) Vessel stowage requirements	
							Exceptions	Non-bulk packaging	Bulk packaging	Passenger aircraft or rail car	Cargo aircraft only	Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
.....	*ADD*												
D.....	Air bag inflators or Air bag modules *for supplemental restraint systems. See also* Articles, pyrotechnic *for technical purposes* (UN0430, UN0431, UN0432).	4.1	NA1325	III	Flammable solid.		166	166	166	25kg	100kg	A	

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

3. The authority citation for part 173 continues to read as follows:

Authority: 49 App. U.S.C. 1803, 1804, 1805, 1806, 1807, 1808; 49 CFR part 1, unless otherwise noted.

4. A new § 173.166 is added to subpart E to read as follows:

§ 173.166 Air bag inflators and modules (for supplemental restraint systems).

(a) *Definitions.* An air bag inflator (consisting of a casing containing an igniter, a booster material and a gas generant) is a gas generator used to inflate an air bag in a supplemental restraint system in a motor vehicle. An air bag module is the air bag inflator plus an inflatable bag assembly.

(b) *Classification.* An air bag inflator may be classed as Division 4.1 only if—

(1) The manufacturer has submitted, to the Bureau of Explosives (BOE) or the Bureau of Mines (BOM), a complete application containing a detailed description of the inflator (or, if more than a single inflator is involved, the maximum parameters of each particular inflator design type for which approval is sought) and details on the complete package.

(2) The manufacturer submits an application, including the BOE or BOM test results and report recommending the shipping description and classification for each device or design type, to the Associate Administrator for Hazardous Materials Safety, and is notified in writing by the Associate Administrator that the device has been classed as Division 4.1 and approved for transportation.

(c) *EX numbers.* When offered for transportation, the shipping paper must contain the EX number or product code for each approved inflator in association with the basic description required by § 172.202(a) of this subchapter. Product codes must be traceable to the specific EX number assigned to the inflator by the Associate Administrator for Hazardous Materials Safety. A module must be identified as containing the originally approved inflator.

(d) *Exceptions.* (1) An air bag module that has been approved by the Associate Administrator for Hazardous Materials Safety and is installed in a steering column or a motor vehicle is not subject to the requirements of this subchapter.

(2) An air bag module, containing an inflator that has previously been examined and approved for transportation as a Division 4.1 material, is not required to be submitted for examination or approval.

(e) *Packagings.* The following packagings are authorized:

(1) 4C1, 4C2, 4D, or 4F wooden boxes.

(2) 4G fiberboard boxes.

(3) Reusable high strength plastic or metal containers are authorized for shipment of air bag inflators and modules by highway and rail from a manufacturing facility to the assembly facility, subject to the following conditions:

(i) The gross weight of the container may not exceed 908 kg (2,000 pounds). The container structure must provide adequate support to allow containers to be stacked at least three high with no damage to the containers or devices.

(ii) If not completely enclosed by design, the container must be covered with plastic, fiberboard, or metal. The covering must be secured to the container by non-metallic banding or other comparable methods.

(iii) Internal dunnage must be sufficient to prevent movement of the devices within the container.

(f) *Labeling.* Notwithstanding the provisions of § 172.402 of this subchapter, each package must display a FLAMMABLE SOLID label. Additional labeling is not required when the package contains no hazardous materials other than the devices.

Issued in Washington, DC, on January 8, 1992, under authority delegated in 49 CFR 1.53.

Travis P. Dungan,

Administrator.

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